Two distinguished chemists, MM. Bouchardat and Mialhe, have recently offered their explanations of the mode of production of this affection, and suggestions as to the best means of coping with it. According to M. Bouchardat, the diabetic urine proceeds from the transformation of fecula into sugar, and the quantity of this will be found to be great in proportion to the quantity of bread and feculent aliment consumed; and he advises a modification of the animalized regimen which had already been employed by Rollo, Thenard, Dupuytren, &c. He gives also a glutinous bread, containing only one-fifth of flour, and endeavours to regulate the functions of the skin by warm clothing, exercise, and the use of baths. In obstinate cases, he thinks well of the carbonate of ammonia as a medicine, only using the bicarbonate of soda when the glucose is in moderate quantity, and the urine simultaneously contains uric acid. Lime-water and magnesia, by retarding the solution of feculent matters, become useful adjuvants, being, however, of only temporary avail. According to M. Mialhe, the defective decomposition of sugar, and its passage into the urine, depend upon the insufficient alkalescence of the humours; it being, in his opinion, by the instrumentality of the alkalies of the blood and of the animal fluids, that digestion of amyloid and saccharine substances is effected. His treatment consists in the administration of the alkaline waters of Vichy, and the re-establishment of the functions of the skin, the alimentation becoming then a secondary consideration. To both these views of the nature of the disease, the natural production of sugar in the liver and the saturation of the blood by it when the eighth pair are excited at their origin, or in their course, present serious objections. To M. Mialhe's view may also be opposed the facts, that the blood, only slightly alkaline in its normal state, does not become acid in diabetes, and that a more alkaline fluid than it has been found, by M. Magendie's experiments, not to decompose the glucose. The serum of the blood of the horse is less alkaline than is that of man, and yet the sugar is just as easily destroyed in the one as the other. In fact, it is not by the alkali of the blood that such destruction is effected, but, as shown by M. Magendie, by the respiratory action. M. Bernard believes the disease to be an affection of the pneumogastric nerves: but we may also ask whether, in some cases, it may not arise from some peculiar alteration in the liver.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1849, from a *Report of M. Magendie's Lectures at the College de France, by M. Fauconneau-Dufresne. L'Union Médicale*, Nos. 72, 75, and 79.

3. *On the Physiological Anatomy of the Spleen.*—Dr. W. R. Sanders arrives at the following conclusions, which he gives at present without any details:—

I. The Malpighian glandulæ or sacculi, and the pulp of the spleen, constitute a true secreting apparatus.

A. The Malpighian sacculi are hollow, spherical, membranous bags, completely closed, and filled with organized contents; they are attached to the trabeculæ by an arterial pedicle, and are imbedded in the pulp.

Saccular Membranes.—The outer membrane of the sacculi is fibrous, and contains *arterial* ramifications and numerous capillaries; their inner membrane is granular.

Saccular Contents.—On the inner surface of the membrane is applied a complete layer of nucleated cells; which are clear (not granular), of about 1-1200th inch diameter, and of a light yellowish colour, when not altered by the action of water. The rest of the interior of the sacculus is filled up by free corpuscles (containing nucleoli) of a light grayish colour, and of about 1-4000th inch diameter, corresponding precisely with the nuclei of the cells, and by a homogeneous or slightly granular plasma.

The perfection of the forms, the constancy and uniformity of appearance of these corpuscular elements, together with their reactions under water, acetic acid, &c., are extremely characteristic, so that they are easily and distinctly recognized. There is also evidence of the growth and maturation of the sacculi. This part, therefore, of the glandular anatomy of the spleen exhibits characters as perfect and as truly distinctive as the glandular elements of the liver, kidneys, salivary glands, &c.

The sacculus is the formative secreting organ, analogous to the acini of known secreting glands.

B. The splenic pulp consists, like the contents of the sacculi, of plasma and corpuscles; but the nucleated cells are extremely few, and mostly granular—hence the reason why they were not detected by observers who did not examine the sacculi apart from the pulp with sufficient care; the plasma is full of granules, which are distinct, and infinitely more abundant, than within the sacculi; and the corpuscles, instead of a regular uniform shape, are mostly angular, deformed, with great variety of shape and appearance, and *breaking up into granules.* These corpuscles are often, also, of a reddish colour; and, besides them, coloured semi-crystalline particles, of a deep red or yellow hue, and whose true relation is not yet perfectly made out, are found in the pulp.

The pulp is, therefore, that part of the glandular apparatus where the corpuscles of the spleen become disintegrated and dissolved into granules and plasma; and, if the sacculi are analogous to acini, it is probable that they burst and effuse their contents into the pulp, where they undergo degenerating changes, becoming thus fit for absorption: the pulp being a reservoir or *duct,* in which the secreted product is lodged for a time, and undergoes the ulterior changes of maturation and solution.

II. The veins are the absorbent elements of the spleen, and carry away its secretion.

This is rendered probable by their extraordinary number and size; by their abundant ramifications in the *pulp* (while the *arteries* are spread over the secreting *sacculi*); by evidence derived from the composition of the splenic venous blood, as shown in Béclard's recent comparative analysis of splenic and other venous blood (*Archives Générales de Médecine,* Oct., Nov., Dec., 1848); and by general analogy in the nature, functions, and relations of the portal circulation in the adult and in the fœtus.

III. The blood circulation within the spleen is peculiar, but the peculiarities are not confined to the venous circulation, as has been generally supposed, but are common to it with the arterial. Its general principle is, "the sudden and immediate transition from very large to very small vessels," which renders the circuit of the blood-current extremely short. This general rule does away with all the minor differences of vascular distribution found in the spleens of man, the horse, dog, &c., compared with those of the sheep, bullock, &c.

The venous cells of the spleen, though, under certain circumstances, an undoubted appearance, are entirely artificial, and always produced by methods of preparation, on which no reliance should be placed.

There is no satisfactory evidence that the lymphatics are the excretory ducts of the spleen; nor that its fibrous tunic or trabeculæ are muscular, or anything more than very elastic.

Conclusion.—The spleen is a true secreting gland; and its product, which is some organized or organizable albuminous compound, is absorbed into the venous blood of the portal system, and *contributes,* but is not essential to nutrition.

The elements here mentioned are constant: they are easily made out in the spleens of the bullock, sheep, &c., *when quite fresh.* In the human spleen, they are in general less easily analyzed; but the microscope shows them to be identical, and, further, thus affords the means of recognizing and establishing the existence of the Malpighian sacculi, when (as not unfrequently happens in the human spleen) they are not visible to the naked eye, or, at least, not distinguishable from the pulp.—*Med. Times,* April 21, 1849.

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4. *On the Medullary Substance of Bones.* By MM. Gosselin and Regnauld.—Most anatomists have in general terms described the existence of a medullary membrane supporting and surrounding the medullary substance; but when they enter into particulars concerning it, they declare its tenuity to be such that its existence is demonstrated with difficulty. In the present paper, the authors declare that careful examination conducted by the naked eye, the microscope, and chemical tests, in a great variety of cases, have convinced them that, in point of fact, no such membrane does exist, the doubts already expressed by Ruysch, in respect to it, becoming thus fully confirmed.